NOAA CONDUCTS RESEARCH MISSION OF UNDERWATER HABITATS OF THE U.S. VIRGIN ISLANDS

A PARTNERSHIP BETWEEN THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, THE US VIRGIN ISLANDS, THE US NATIONAL PARK SERVICE, AND USGS

The National Oceanic and Atmospheric Administration's (NOAA) Center for Coastal Monitoring and Assessment (CCMA) Biogeography Team will be conducting the second year of an ongoing scientific research mission on board the NOAA Ship NANCY FOSTER from February 1 to February 12, 2005. This joint mission with the National Park Service (NPS), the National Marine Fisheries Service (NMFS), and the US Virgin Islands government will explore and characterize moderate depth habitats (<300m) within the U.S. Virgin Islands for natural resource management. Priority areas for 2005 include NPS's Buck Island Reef and Virgin Islands Coral Reef National Monuments, Salt River Bay National Historical Park and Ecological Reserve, and NMFS's Grammanik Bank system south of St. Thomas.

Scientists will explore the type and extent of habitats in selected portions of the project areas using multibeam sonar and under water video cameras. During the mission scientists will collect high-resolution bathymetry; habitat hardness and habitat roughness; and complementary video data that provides information about the seafloor. A Reson 8101 ER multibeam echosounder will collect bathymetric depth information and backscatter imagery in depths of 15m to 300m. A Spectrum *Phantom S2* remotely operated vehicle (ROV), run by NOAA's National Undersea Research Program, will collect underwater video imagery of seafloor habitats in depths down to 300m.

In addition, CCMA has been conducting ongoing fish trap surveys and visual censuses using belt transects and stationary point counts (e.g. visual observation by divers) of fish, conch, and lobsters to characterize the populations of these resources within and outside the National Monuments. This existing biological data will be combined with abiotic data from the mission to produce maps of the seafloor topography, identify and map the seafloor habitats, and create spatially-explicit models of how fish species utilize habitats. The mission will also help NOAA meet its commitment to the U.S. Coral Reef Task Force to map coral reef ecosystems, and provide new information to update nautical charts covering the U.S. Virgin Islands.

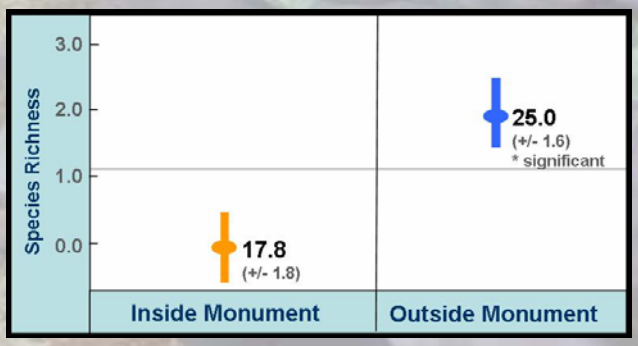

Figure 1. Initial analysis of reef fish census data indicating significant differences among sites inside and outside of NPS's USVI Coral Reef National Monument (Alpha = 0.05).

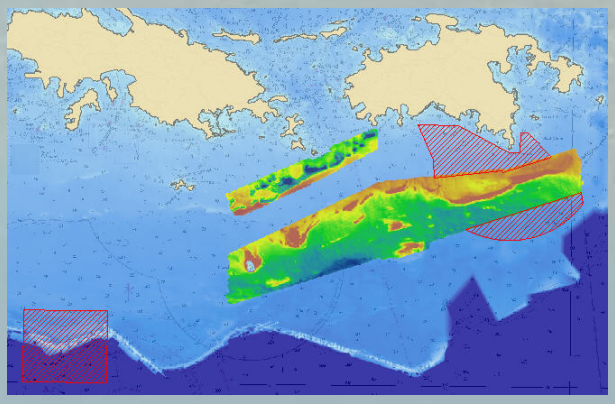

Figure 2. Project areas for the 2005 mapping effort around St. John and St. Thomas (shown in red hatch), overlaid with multibeam bathymetry collected during the 2004 mission.

Figure 3. A school of French grunts and blue chromis congregate among the diverse corals within the Virgin Islands Coral Reef National Monument south of St. John.

To conduct the investigation, CCMA is collaborating with other NOAA program offices including the National Marine Fisheries Service (NMFS) Coral Reef Ecosystem Division (CRED) and Southeast Regional Office, NOAA's National Undersea Research Program (NURP), NOAA's Marine and Aircraft Operations (NMAO), the National Geodetic Survey (NGS), the Office of Coast Survey (OCS), and the Center for Operational Oceanographic Products and Services (CO-OPS). The U.S. Virgin Islands Territorial Government (Division of Fish & Wildlife and Coastal Zone Management), the US National Park Service (NPS), the Caribbean Fisheries Management Council, and the University of New Hampshire Center for Coastal and Ocean Mapping/ NOAA Joint Hydrographic Center (UNH CCOM/JHC), are also a part of the effort. The partnership based study is supported by NOAA's Coral Reef Conservation Program and the National Centers for Coastal Ocean Science.

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